1890
(Municipal)

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file 107
Sls: 1-2

Water Supply to the city of Mysore.

Indexed
M Khan

Sanitary Engineer's Office
Spl Impts Dr

Dated Mysore 21-7-91

Memorandum.

The Dewan having called for a Statement showing the present condition of the Water-Supply to Mysore City, and the quantities of water that might be made available from all sources, in case the present South-West Monsoon should fail, the undersigned begs to report as follows -

The present level of water in Kukkerhully Reservoir above Sluice level (2470·00) is 5'-1" by the gauge, but in reality only 4'-7" owing to the gauge being fixed 6" lower, and contains 10,434,640, cft. The water below tapping level, and which might be pumped up is 5,277,000 cft - The water contained in the Space between the new and the old tank bunds, after discharging the water polluted by bathing is about 60000 cft. making

a grand total, without allowing for ground-
-Springs, of 16,311,640 cft.

An inspection of the Register of
Water drawn from the Kuilerhully Reservoir
discloses the fact, that the average fall in
the level of water per month may be taken at
1·2 ft or ·04 of a foot per diem; at which
rate the Consumption per day is 90,736 cft.
Therefore the total quantity now available
would last for 179 days or Six months.

The Karranjee Vault Supply is not
taken into Consideration in the above Computation,
as it is already below Sluice level, and unless
at least partially replenished by rains, will be
dry in a couple of months.

"

Sanitary Engineer
Spl- Impts - DN

21-7-91.

"

No 805
1142

Ec 2.

Office of the Sanitary Engineer
Sys Surveys Division
Bangalore 20 June 1891.

To

The Chief Engineer
of Mysore

Secretariat Record
File No 1-85
Serial No 1

Sir,

I have the honor to submit for your information a Diagram of heights of water, and a Statement of the dates on which the Kukkehalli Reservoir attained its maximum and minimum levels of water from 1883 to 1891.

2 A study of these results reveals the unpleasant fact that on two occasions Mysore was within 100 days of a water famine and that, had the conditions of rain-fall in 1888 been repeated in 1889; that is, had the water in Kukkehalli risen only 16 23 feet in 1889 as it did in 1888, Mysore would now have

supply of water that would last
for only 37 days

3 Having thus reduced facts
& figures, we have a definite
idea of the consequence that
would result from a cessation
of rain for three months, or, from
Scanty rain-falls for two successive
monsoons. It is therefore matter
for reflection, under these cir-
-cumstances, what would be
the condition of Mysore with
a dense population of 7200
souls; with all the old sources
of water supply either removed
or fallen into disuse, and with
no water in the storage reser-
-voir. Any expedient that may
under such an emergency be
suggested to mitigate present
suffering will have no influence
of a permanent nature, while,
it is deemed to be unduly expen-
-sive. It is, therefore, prefer-
-able to devise plans to resist
the approaching event than
to seek remedies after having
taken by it.

The last north-east monsoon

having failed to contribute towards the supply of water in the reservoir, there is at present only a deficiency for 200 days. It is quite possible that a few days hence may see the reservoir full, but it must not be concluded, if it should chance for a year or two to pass off harmlessly, that the views not represented are mere speculations. If a year of abundant rain-fall should intervene, it will be the part of wisdom to profit by the delay, and push forward works that will place the water-supply of the Capital of the Province beyond the caprice of the seasons.

5. The values of the monthly run-off over the drainage area of Kuketshilli, for the 7 years we have been recorded, show that the volume discharged depends more on the season when the rain falls, and the quantities falling in a certain time, than upon the actual annual rain-fall. Much of the

South-West-

South west-monsoon which follows Summer showers, in the hot weather, is evaporated at once, or absorbed by the dry earth; and if there happen the long intervals between the down-pours of the north-east monsoon, the flow- ~~of~~ is scanty.

6 A rain-fed tank, therefore does not secure sufficiently the safeguards demanded in a source of supply on which the lives of a whole population depend. With a perennial stream in the Cauvery within easy distance of the town, Mysore should never know a scarcity in its water-supply.

7. In May 1885- I submitted a proposal of pumping up water by means of turbines; but the scheme was laid aside owing to it containing a number of factors the probable results of which were undetermined at that time. Since these proposals were made, however several of these objections have been removed, thus:—

(1) The fear of hubby and

and reconing of ~~drawing~~ driving tunnels ~~through~~ decomposing through the ~~accompanying~~ beds of rock on which the Surface Soil rests everywhere in Bhyderabad, have been proved by the tunnel work carried out in connection with the main drainage.

(2) The falsity of the supposition that water pumped into a small channel, cut in Soil of the geological formation of Bhyderabad, would be all absorbed before it reached the Reservoir, is amply proved by the Satisfactory working of the various small off-takes recently made in the Drainage and other channels in the immediate vicinity of Bhyderabad.()

(3) Examples of Indian ~~Towns~~ supplied with water in the manner proposed by me are also not wanting now, as several similar Schemes have been recently carried

out in the North-west, and the details of the works published in the Indian Engineer.

8. I would therefore respectfully urge the reconsideration of my proposals of 1885, to raise water by pumps worked by turbines for filling Hukanhullie; and would suggest that advantage be taken of Col: Bowen's presence in England to develop the scheme, by wiring fair copies to that Office.

9. In addition to the above, I would also again urge the reconsideration of my proposals in reference to the intercep-tion of the clear water that runs to waste under the Hukanhullie Bund. I formerly recommended a windmill, but consideration of the scheme was deferred until experience was gained with the working of wind machines for the supply of water to the Bangalore Palace. Should this

this experience have been satisfactory I would urge the erection of a windmill to work a "Screw-pump" of the description used on the Antwerp water-works, and illustrated in the Minutes of Proc: Civil Engineers Vol: Ie XXII, Page 31. This is the most effective pump for short lifts, and is well adapted for Rhyone, as the lift is only 12 ft.

10, What is proposed is that the pumps should be the primary means for filling the conduit that supplies Rhyone, and that all deficiency should be made up by drawing directly from the Reservoirs. This would tend greatly to husband the supply in Rukwahilly, & serve to tide over a scanty season while water for some years, but the only safe guard for an insured water supply is a resort to the Rivers.

I have &c.
Sigurd Skavaski Lieut.
Sanitary Engineer
S.L. Envts &c

Encl:.
1. Diagram. Statement.

Levels

On account of the difference in the level of the Masonry — of the Kokarhally Water just at the Commencement of it, the levels taken on 21-7-91 change as follows.

	R.L
(1) Height of water in Kokarhally Reservoir (Ht-7" ashmarks)	24 74.
(2) Sill of the Sluice — —	2470.00
(3) Point of delivery on the head of the Centrifugal pump	2472.68
(4) High water level of pumping Tank depth being 6 ft.	2461.38
(5) Level of the dam under Construction in Surplus Channel	2459.43
(6) Ring bund East of Reservoir Garden	2461 32
(7) General drainage level of the old Tank Bund	2459 97 / 2461.31
(8) Cody of Kaura Gowden Kothal	2440.10

22/7/91.

For immediate Operation

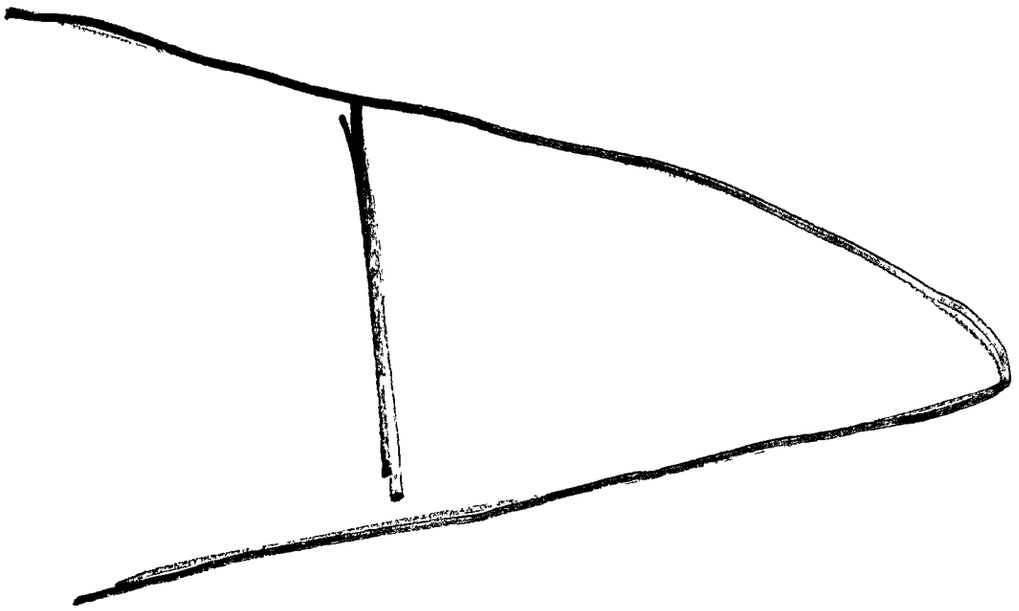
1. Level (4) will soon go down with our pumping & become the same as that of the Bathing tanks. Say 2457 ft.
2. Temporary Stop loss at (5) in the new Kodi channel & allow the water to rise in bathing tanks, or Shutter off, or at any rate for to Compensate for, loss by pumping.
3. If this proves the Supply to be Satisfactory raise bund (7) to 2465 or 2466, and Keep Kodi Channel level at (5) some 3 ft. lower by means of a water tight Dam —

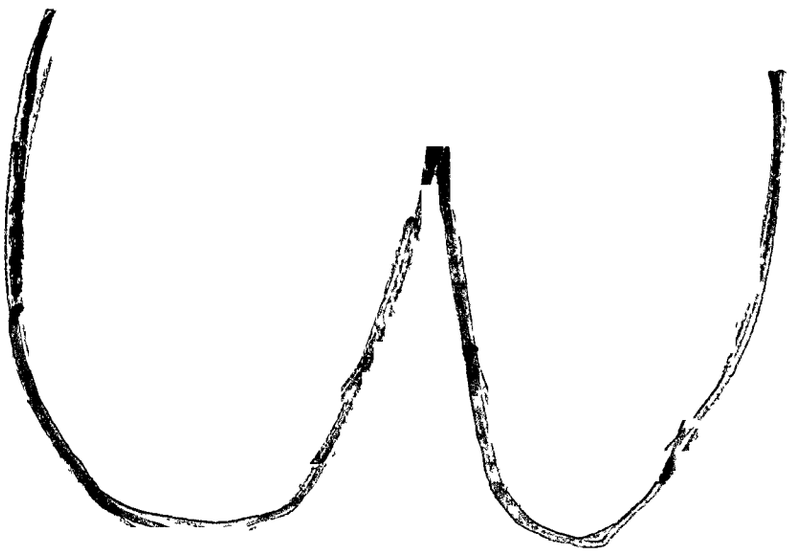
Statement of Water in the Rukarkuln Reservoir. Klyoona.—

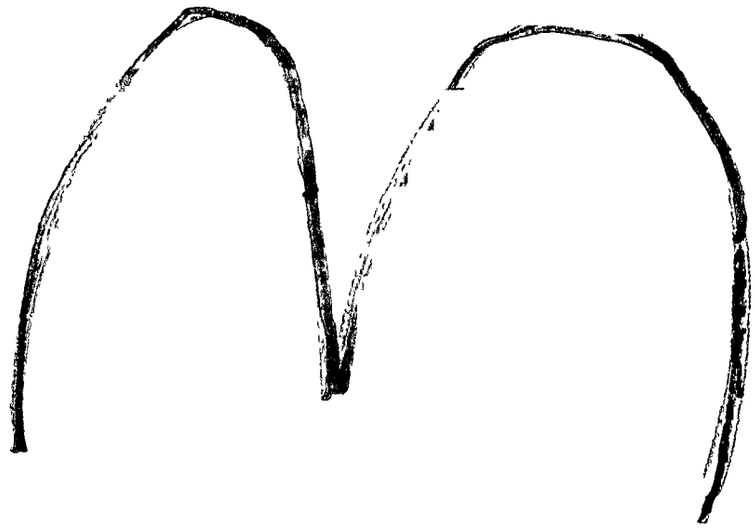
	Temporary Distribution							Permanent Distribution		
	1883	1884	1885	1886	1877	1888	1889	1890	1891	
Maximum Water	21st 11.9	18th Jany 11.70	14th Jany 9.50	1st Octr 8.5	30 17.02	1st January 16.25	16th May 22.00	23rd May 20.25	18th	2-6
Minimum Waters	6th Sept 4.5	5th 5.80	7th 1.80	th May 2.10	16 3.09	1st Decr 8.12	21 3.75	1st Decr 12.6	30th May	6.8 ×
Numbers of days minimum water would supply	160 days	205 days	63 days	74 days	106 days	259 days	103 days	333 days		191 days

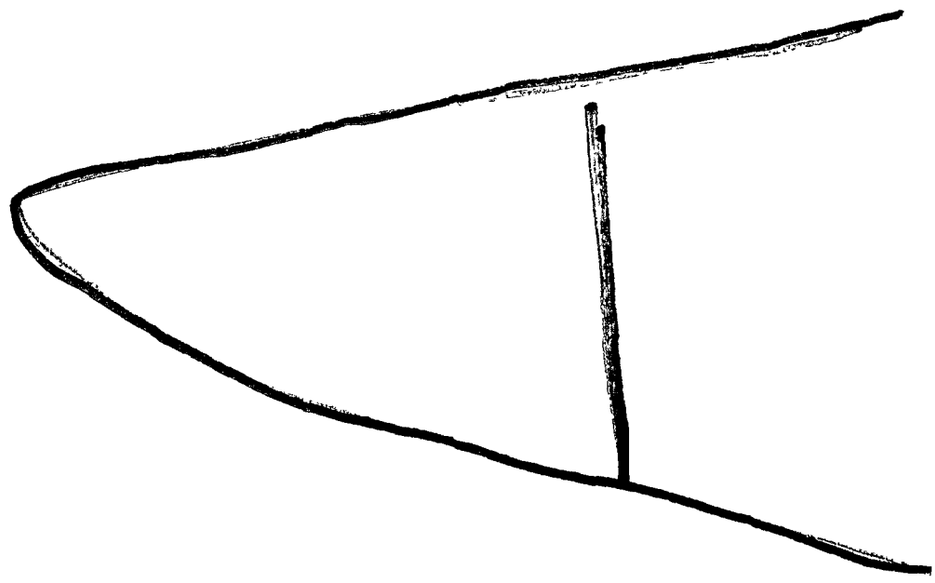
× Present 21/7 supply is 5. 2/2

D/ 3 6/91









Mysore Water Supply

SUBMITTED FOR

HIS HIGHNESS' ORDERS.

Secretary
Y-90
2

The water Supply of the City of Mysore for the next 12 mos Shd the tank not fill this Year is a Serious question which has been giving me Considerable anxiety.

The Steps taken are briefly described in the accompanying papers.

As I reported the day before yesterday heavy Washers are Now Stopped from today in the Reservoirs below the Kukkerhalli tank. The Capacity of these Reservoirs agt a Dry Season will now be tested - I believe by pumping from these Reservoirs we can keep the City fairly supplied with water for Several months. The level of water in these Reservoirs # is to be raised 4/-

possible by stopping all waste
from them. The bund of
the Old tank may have to
be raised by a bye from 3 or 4 ft.

~~I am~~ I
The Kukkerhalli big tank
has a catchment of 20 Sq.
miles. With ordinary rains
it must fill Every year,
and if we can any prevent
loss by percolation, we ought
never to have any difficulty.
We shd try & see how we
can stop ~~percol~~ this loss
by dealing with the Old Kukker-
halli bund as above mentioned.—

In the meantime I am
Studying also the possibility
of Supply from the Kaveri — Such
Supply is only possible by means (with our resources)
of Pumps. The lift required
to fill Kukkerhalli (2491' above mean Sea level)
would be from 250 ft from the Kaveri & 200 ft
if from Arsandi Channel. Filling a tank
Pumping is a most wasteful Operation. I am
studying this Subject also & research— 23 Aug 1891

DPW 14

Water Supply — Impore City.

The Kukerhalli Tank is very low, and if it does not recieve a supply early or fails to fill during the next north-east monsoon, the City will suffer much. Old sources of water-supply have been long in disuse and it would not be safe to resort to them now.

2 Several weeks ago I ordered pumping to commence from the no 1. Reservoir below the tank. The work is about to commence No further time should be lost in the matter Every endeavour should be made to give the required present supply by pumping as long ~~long~~ as it may be possible, thus avoiding the need for drawing directly from the Tank till the prospects of the N.E. monsoon become some-what assured.

3. I have inspected the Bathing-Tanks below no 1-Reservoir from which it is proposed to pump. No 2- Reservoir (1st Bathing Tank for men) should not be used for bathing or washing until further orders. No 2 Bathing Tank for men

may

may continue to be used by them for bathing and washing and the bank to be on the west of it should at once be cleared & made available for bathing & washing.

4. Yesterday I marked on the Topo: sheet what the S.W. boundary of the Gordon Park should be. Mr. Standish Lee should report how this will enable us to secure the perfect purity of the water in the Reservoirs below the Kukerhalli Bank.

5. The spoilbank of the Kodi Channel is being used as a corner behind which to commit nuisances. This should be prevented. The villages accuse the cantonen as the offenders. The Vice-President must take immediate steps to abate this nuisance before the next fall of rain.

6. Kukerhalli & Madigarahatti (very dirty villages) now drain into the Bathing Tanks & thus endanger the purity of the tanks from which we have to carry on pumping. Judging from the contours on City-Topo Map, it would be easy to drain those villages towards the South by means of a small road-drain on the west

of the

of the Road which the Amildar is now marking out. These villages are above 2490 feet level & the Road is for the most part below that level. The Vice-president & Sanitary Engineer will please pay early attention to this.

7. A Revision of the Bathing arrangements appears desirable & Mr. Standish Lee must at once study the subject & report upon it as early as possible. After the Chamraja Road & the diagonal from it, as pointed out yesterday, are completed, there is no reason why bathing should not be transferred to the South of the Diagonal road & along the Kodi-Channel. In this way we could have a large quantity of pure water to pump into the city. The pumping should be done by means of a Stationary Engine, in one corner of the Distillery-buildings, if possible under a combined scheme ordinarily for high-level & on an emergency like the present, for low-level service as well. I have explained the details of ~~that~~ such a scheme to Mr. Standish Lee in person & I would like the scheme to be elaborated as early as possible.

17

8. To avoid delay. I send a copy of this direct to Hon Lee & Hon Mahomed Ali

Dd K. Sheshadri Iyer
Dewan.

Dated Ernpore
19th July 1891

F.A.

Please send today copies as above & attended to
then let this go to Colonel Bowen by mmd
tomorrow's post. 19/7

Dd K.S.

mmd